TEXTILE TECHNOLOGY DIGEST

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ABSTRACTS

FIBERS A

An investigation into bending and torsional rigidities of some fibers

J. C. Guthrie, D. H. Morton and P. H. Oliver (Courtaulds Ltd). *J. Textile Inst. 45:* T912-T929 (December, 1954).

The strains to which fibers in a textile fabric are exposed are not solely tensile. The fiber may also be twisted and bent, and, in particular, the draping and handle qualities of a fabric would be expected to be closely related to the bending rigidity or stiffness of the individual fibers. In this paper, bending rigidities by static and dynamic methods, and torsional rigidities by a simple dynamic method, have been measured for a series of fibers. Bending rigidities are discussed in relation to tensile measurement. 30 references.

New textile raw materials, their properties and possible uses

A. Parisot. *Bull. Inst. Textile France No. 47:* 7-47 (June, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 926 (1954).

The review comprises the history of synthetic fibers, classification of natural and man-made fibers and properties of the most used natural fibers as compared with those of synthetic fibers (physical, mechanical, chemical and biological), with reference to the effect of the spatial geometry of the yarns and fabrics on those properties. The problem of fiber blends and their properties are briefly discussed and possible uses for clothing and industrial purposes are pointed out.

NATURAL FIBERS A 1

New cotton properties through chemical research

C. H. Fisher (Southern Regional Research Laboratory). *Textile Research J. 25:* 1-11 (January, 1955).

Some of the numerous opportunities for transforming cotton through chemistry into new textile products have been listed. Emphasis has been given to research that attempts to select reagents and techniques that should produce new textile products having certain properties.

Contribution to the fundamental knowledge of nep formation

D. De Meulemeester, G. Raes and G. De Backer. *Ann. Sci. Textiles Belges 2, No. 2:* 6-13 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 944 (1954).

In the previous article a linear relationship was reported between the number of neps per gramme of card sliver and the Micronaire fineness or maturity of the fibers. Some of the cottons, however, depart from the regression law. The abnormal behavior of these cottons was studied and the tendency of dead fibers to nep formation was attributed to their softness, their weakly developed wall and the flattened form of their cross-section rendering them less stiff. The stiffness was, therefore, determined indirectly from the strength-elongation curves and a very high correlation was found with the number of neps. None of the fifteen cottons examined departed significantly from the regression line. A theory was thus advanced that the nep formation is due mainly to the rupture of less stiff fibers (dead, immature) in the various machines, starting from ginning.

Scientific and technical aspects of the production of bast fibers

E. Emiliani and E. Vaccari. *Rev. fac. ing. quim. 21-22:* 189-225 (1952-1953). Through *Chem. Abstracts 49:* 620 (January 10, 1955).

A review with 100 references.

Theory of fiber extraction. Chapter 1. Fibrous plants (continued)

J. G. Thieme. *Textile Quart. 4:* 249-260 (October-December, 1954).

The leaf fibers are surveyed. 58 references.

Morphological relations in cellulose fiber cells

F. Stern and H. P. Stout. *J. Textile Inst. 45:* T896-T911 (December, 1954).

The dimensions and X-ray spiral orientation of the cells extracted from native cellulose fibers are measured for a variety of fiber-bearing plants. Leaf fiber cells show marked variation in dimensions and orientation, but there is an inter-

dependence of these properties such that the longer cells are of smaller width and steeper spiral than the shorter cells. Phloem fiber cells have different dimensions and orientation according as to whether they are of primary or secondary origin, the primary cells being longer, broader, and oriented more nearly parallel to the length, than the secondary cells. The relationships connecting length, breadth, and orientation as described by the Hermans angle, in the case of leaf fibers, suggest, if interpreted in terms of a simple spiral model, that spiral turns per unit length tend to be constant for the different cell species, and that the average length of the cells tends to vary inversely as the average breadth. 28 references.

Ancient and modern views on the steeping of hemp

M. Formisano (Univ. Naples, Portici). *Ann. fac. agrar. univ. Napoli Portici (Napoli) 20:* 58-89 (1951-53); *in Italian.* Through *Chem. Abstracts 49:* 1332-1333 (January 25, 1955).

Review with 225 references of microbiological and chemical investigations.

Ramie. Chapter 7. Yarn and cloth properties

B. Luniak. *Textile Quart. 4:* 238-248 (October-December, 1954).

Physical properties of wool fibers: tensile properties. Part 1

Wool Sci. Rev. No. 13: 47-55 (November, 1954).

The treatment of the general question of the visco-elastic properties of wool in these articles includes both data of fundamental interest and also data on the behavior of the fiber during everyday processing. 7 references.

Fibrous minerals. Part 1. Asbestos fiber in industry

Fibres 16: 5-8 (January, 1955).

MAN-MADE FIBERS A 2

Fiber data sheets: polyester synthetic fibers; Terylene, Dacron

P. A. Koch. *Fibres 16:* 22-25 (January, 1955).

Data, including history and development, manufacture, chemistry, properties, products, applications, patents, etc. 89 references.

Properties and chemical resistance of Lilion

Riv. tess. Aracne 9, No. 8: 897-904 (1954); *in Italian.* Through *Brit. Cotton Ind. Research Assoc. 34:* 946 (1954).

Data are given on chemical and physical properties of the Italian polyamide fiber Lilion; they comprise: resistance to water, acids and alkalis, effect of bleaching agents and organic solvent, fire-proof properties, non-toxicity, resistance to carbonization and the effect of carbonization on dyeing properties. Two tables are given; in one are listed chemical treatments that are harmless to the fabrics and the other shows the concentrations and temperatures of caustic soda and hydrochloric, sulfuric, acetic, formic, nitric and oxalic acids to be avoided when treating Lilion fabrics.

Thermovyl staple for use in dress goods manufacture

Société Rhovyl, France. *Skinner's Silk and Rayon Record 29:* 48-49 (January, 1955).

Some properties and uses of Thermovyl staple are described. Mounted sample with complete details.

Toramomen 51: Japanese strong viscose staple

Kyoto Rayon Co. Ltd. *Skinner's Silk and Rayon Record 29:* 76 (January, 1955).

Properties and uses of Toramomen, Delta, and Acetovis rayon staple.

Tufton

S. Lippincott (American Viscose Corp.). *Textile Forum 11:* 11-12, 24 (October, 1954).

Tufton rayon fibers for soil resistance, crush resistance, and eye appeal in carpets.

Courpleta

Courtaulds Ltd. *Textile Wkly. 54:* 1922-1923 (December 17, 1954).

Properties and uses of Courtaulds' triacetate yarn and staple are briefly described.

New aspects of acetate fibers

A. Sippel. *Melliand Textilber. 35:* 1317-1320 (December, 1954); *in German.*

Peculiarities in the chemical structure of cellulose acetate cause peculiarities in the fiber structure, and result in definite combinations of mechanical properties which particularly influence suitability for use in blends with other types of yarns and fibers. Both continuous filament and staple fiber acetate are discussed. 20 references.

1954 review of developments in man-made fiber production and processing technology. Part 1. Polymer chemistry

Brit. Rayon and Silk J. 31: 62-66, 80 (December, 1954).

Polyvinyl alcohol vies for attention in world synthetic fiber picture: Vinylon

Chem. Eng. 62: 108-110 (January, 1955).

YARN PRODUCTION B

An investigation into the relationship between fiber and yarn properties in several mills

J. W. Van Dalfsen and J. C. A. Zaat. *Tex 13, No. 8:* 898-905; *No. 9:* 1031-1038 (1954); *in English.* Through *Brit. Cotton Ind. Research Assoc. 34:* 945 (1954).

In each of eight mills, twenty different cottons were spun in the usual way into warp yarns of several standard counts. The fiber properties of the cottons (mean length, uniformity, Pressley index, Micronaire reading, maturity, and number of neps), and the yarn properties (lea-strength, uniformity, single-strand tensile strength, elongation at break, and Uster regularity) and their relationships were determined for each mill individually. The bunch analysis method of Frisch was used in the calculation of multiple regression equations for a yarn property resulting from fiber properties. Results are given in twenty tables.

New method for manufacturing flake yarn in the waste spinning mill

G. Porsche. *Textil-Praxis (English ed.) No. 4:* 156-158 (November, 1954).

A new method (only applicable for flakes of the same color as the ground material) characterized by a periodic change in distance between drum and doffer clothing to achieve different degrees of material take-off by the doffer clothing.

Processing of acetate staple. Part 1

Textile Merc. 131: 1047-1050, 1069 (December 10, 1954).

Spinning Celafibre on the cotton system.

Processing of acetate staple. Part 2

Textile Merc. 131: 1091-1092 (December 17, 1954).

Spinning Celafibre on the woolen and worsted systems.

Production of blended worsted greys

P. P. Townend and P. V. Beardsworth. *Textile Recorder 72:* 83-85 (January, 1955).

Concluding their account of the different production methods of cloths of black, white and melanged wool blends, the authors discuss the examination of samples at various processing stages.

Studies on quality improvement of nylon textiles. Part 2. Effects of the atmospheric temperature and humidity on stretching and shrinking of nylon fiber

T. Yasuda. *J. Soc. Textile Cellulose Ind. Japan 10, No. 6:* 273-276 (1954); *in Japanese (English summary).* Through *Brit. Cotton Ind. Research Assoc. 34:* 915 (1954).

The effect of humidity in the factory was found to be much greater than that of temperature; this suggests that for quality improvement of nylon textiles, control of humidity is extremely important, and has to have priority in cases where perfect control of both temperature and humidity is very difficult.

OPENING, PICKING, FIBER PREPARATION B 1

New blending and oiling process

K. Muller. *Melliand Textilber. (English ed.) 35, No. 2:* 135-136(1954).

See *TTD 11:* 190 (May, 1954).

New machines for cotton processing

Melliand Textilber. (English ed.) 35, No. 2: 106-108 (1954).

German bale breaker and blender, condenser, hopper feeder, and dust cage filters are described.

Oiling of textile fibers

A. Chabrand. *Industrie Textile:* 495-503 (July, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 930 (1954).

An attempt is made to analyze the problems involved in the use of lubricants on textile fibers, and the properties that are required from the lubricating agents, under the following headings: lubricating power, choice of lubricants, emulsifying properties, fineness and stability of the emulsion, insensitivity to calcium salts in water, wetting and agglutinating power, prevention of static electricity, chemical stability, action on the machine, color and odor, and removability. It is concluded that suitably treated mineral oils may be able to solve many aspects of these problems.

Single process opening system in rayon staple spinning

P. de Marsano. *Enka Breda Rayon Rev. (English ed.) 7:* 98-104 (November, 1954).

See *TTD 10:* 1327 (August, 1953).

CARDING AND COMBING B 2

Electric card scale pan mechanism

P. Seuchter. *Melliand Textilber. (English ed.) 35, No. 2:* 124-126 (1954).

Description, diagram, and directions for use.

DRAWING AND ROVING B 3

Cotton drawing systems

J. J. Tschudi. *Melliand Textilber. (English ed.) 35, No. 2:* 110-112 (1954).

See *TTD 11:* 93 (March, 1954).

Double carrier of draft rollers in ring-spinning frames

S. Ishikama, K. Higuchi, T. Kato and Y. Matsumoto. *J. Soc. Textile Cellulose Ind. Japan 10, No. 6:* 265-269 (1954); *in Japanese (English summary).* Through *Brit. Cotton Ind. Research Assoc. 34:* 890 (1954).

The effect of the double carrier is studied and the torsional vibration of the drafting rollers is measured.

Effect of eccentric rollers and faulty roller load distribution upon the regularity of rayon

P. de Marsano. *Enka Breda Rayon Rev. (English ed.) 7:* 105-122 (November, 1954).

See *TTD 10:* 1472 (November, 1953) and *TTD 11:* 325 (August, 1954).

Fiber motion in the roller draft field. Part 2

S. Inchino and H. Goto. *J. Soc. Textile Cellulose Ind. Japan 10, No. 6:* 257-261 (1954); *in Japanese (English summary).* Through *Brit. Cotton Ind. Research Assoc. 34:* 890 (1954).

The steady and unsteady fiber motions in the draft field are analyzed and the change in sliver thickness is calculated from the velocity distribution in the roller draft field.

The scientist looks at the wool industry. Part 2. Drawing

Wool Sci. Rev. No. 13: 3-18 (November, 1954)

The aim of part 2 is to give a simple account of some of the vast amount of work that has been carried out to discover precisely what happens to the wool fibers during drafting. The object of this work is to overcome the problem of short term yarn irregularity. 8 references.

Short process worsted drawing: Raper drawing system

Textile Recorder 72: 70-75 (January, 1955).

A description of the performance of this revolutionary new short system in the Cork Spinning Co. Ltd. and a technical survey of the machinery, its performance and possibilities.

SPINNING, WINDING, TWISTING B 4

Can spinning system

O. Reinhardt. *Melliand Textilber. (English ed.) 35, No. 2:* 118-124 (1954).

See *TTD 11:* 473 (November, 1954).

Choosing your filling winder

D. R. Quinton. *Textile Age 19:* 16-26 (January, 1955).

Various winders are discussed in relation to individual winding requirements.

Features and adaptability of the woolen ringframe

J. A. B. Mitchell. *Textile Mfr. 81:* 22-24 (January, 1955).

Twist constants, change wheels, reversing direction of twist, driving the twister-tubes, and factors deciding the degree of rubbing imparted to the sliver are considered.

High draft on the flyer and ring spinning frame

E. Toenniessen. *Melliand Textilber. 36:* 9-11 (January, 1955); *in German.*

With the aid of numerous drawings and other illustrations, the author proves that it is necessary to mount a weighting roller over the feed roller. He explains the difference between a T-stage drawing system and a multi-zone drawing system.

Houget mule with stationary spindles, traveling strand delivery and infinitely variable spindle speed

O. Reinhardt. *Melliand Textilber. (English ed.) 35, No. 2:* 128-135 (1954).

The Kepa system in cotton and cotton waste spinning

W. Wegener. *Melliand Textilber. 36:* 11-16 (January, 1955); *in German.*

The Kepa system is used as a typical abbreviated spinning process for worsted and is being adopted on an ever increasing scale in cotton spinning mills. The author describes the Kepa drawing system on cotton ring spinning frames, and reports on practical experience. Comparative pictures of yarns spun on the Kepa drawing system, and those spun on an up-to-date one or two-apron high-draft drawing system, show that the evenness is equal. After describing the drawing system for the Kepa one-stage high-draft flyer frame, the author reports on the results obtained with comparative yarns spun from Kepa drawing system slivers and two-stage drawing system slivers. For cotton waste spinning, the same Kepa drawing system can be used as in cotton spinning.

Drafts of 70-80% can be used. The degree of evenness that can be achieved is shown in tables. Cotton waste yarns produced on the Kepa ring spinning frame showed an 8-30% higher tensile strength than those spun on the mule.

Rotafil: a new flyer spinning process

F. V. Schmoller. *Melliand Textilber. (English ed.) 35, No. 2:* 112-116 (1954).

The theory and advantages of Rotafil spinning are discussed by its inventer.

Theory and practice of flax spinning. Part 2. Machinery and equipment. Chapter 14. Yarn and thread finishing processes

A. V. Pringle. *Textile Quart. 4:* 230-237 (October-December, 1954).

The Thieron double ring system for spinning and doubling

B. Struch. *Melliand Textilber. 35:* 1322-1323 (December, 1955); *in German.*

This system operates with an auxiliary ring and traveler, which permits twisting of the yarn between the delivery rollers and the spindle point. The main ring and traveler thus have the sole functions of winding the yarn on the spindle. In this manner, the yarn in the balloon becomes so firm that the spindle speed can be increased by as much as 25%. The elongation value of the yarn is improved by as much as 80%. Sliver or yarn breakings behind the delivery rollers hardly ever occur. The author describes the theory and function of the TD system and gives test data to illustrate the results that can be obtained by using this method. Previously published in Dutch in *Tex 13:* 533-535 (1954). See *TTD 11:* 474 (1954).

Two-zone or two-step high draft flyer

K. Schlien. *Textil-Praxis (English ed.) No. 4:* 145-149 (November, 1954).

See *TTD 11:* 366 (September, 1954).

Woolen ring frame spinning. Part 2

P. P. Townend and B. Jowett. *Wool Rev. 27:* 42-43 (January, 1955).

In Part 1 it was shown that there are two drafting zones in frame spinning, (a) where the end leaves the delivery rollers and enters the drafting field and (b) to a smaller extent inside the false twister tube in the proximity of the front rollers. The false twister tube speed in these experiments was constant. This article describes experiments to determine whether the speed of the tube affected the position of drafting.

Work study in ring spinning. Part 1

Textile Merc. 132: 15-18 (January 7, 1955).

Shows practical examples for computing work loads on spinning frames based on creeling and doffing cycles, cleaning and other operations.

Work study in ring spinning. Part 2

Textile Merc. 132: 70-74 (January 14, 1955).

A discussion of the computation of workloads and incentives in ring spinning, and increasing machine efficiency.

Work study in ring spinning. Part 3. Basis for an incentive wages system

Textile Merc. 132: 107-111 (January 21, 1955).

Principles and methods involved in the development and application of incentive systems are given, based upon standard production rates and bonus rates.

YARNS B 5

14 causes of uneven yarn

M. C. Gross. *Textile World 105:* 81, 176-178 (February, 1955).

Many conditions in spinning contribute to uneven yarn, regardless of the quality of the roving.. 14 of the most-common causes of uneven yarn and what can be done about them are presented.

Handbook of twisting. Chapter 4. Part 3. Effect of twist on strength

N. Truslow. *Textile Bull. 81:* 96-101 (January, 1955).

14 references.

Influence of twist on textile yarns

A. Webster. *Textile Mfr. 81:* 10-15 (January, 1955).

Low twist yarns and yarn packages are discussed.

Mechanical characters of jute. Part 10. Faults of yarn

K. R. Sen. *Jute Bull. 17:* 230-233 (October, 1954).

The yarn faults of irregularity, slubbiness, and hairiness are discussed.

Metallic yarn

Textile Age 19: 32-34 (January, 1955).

The properties and uses of a new yarn called Metlon-Mylar are discussed. It has been formed from a lamination of Mylar polyester film and aluminum foil.

The relation between variation of density and thickness of slivers, rovings and yarns

S. Ishikawa and M. Tabata. *J. Soc. Textile Cellulose Ind. Japan 10, No. 8:* 352-356 (1954); *in Japanese (English summary).*

Theory on the distribution of yarn strength. Part 2

K. Mihira. *J. Soc. Textile Cellulose Ind. Japan 10, No. 8:* 348-352 (1954); *in Japanese (English summary).* Through *Brit. Cotton Ind. Research Assoc. 34:* 910 (1954).

The mean strength and its variance were calculated from the equations given for yarn-strength distribution and the mean strength-length curves and their variance-length curves were graphically illustrated in relation with each correlation coefficient. A theory is advanced (1) that the yarn strength is composed of the essential strength (properties within a breaking length) and the strength depending on some irregular factors, and (2) that a relationship exists between the autocorrelation and the breaking length.

FABRIC PRODUCTION C

Aids to productivity in the woolen industry

L. Bellwood. *Textile Mfr. 81:* 19-21 (January, 1955).

This article discusses manual type looms, pirn sizes, warp beams, cloth inspection and mending, scouring and milling, etc.

WARPING, SLASHING, YARN PREPARATION C 1

Mechanical conditions in sizing rayon yarns

J. C. Meijberg. *Enka Breda Rayon Rev. 8:* 178-183 (October, 1954); *in Dutch.*

In order to obtain a weavable warp, the order of the threads should not be disturbed during sizing. It is therefore necessary to maintain a given tension per thread. On most sizing machines this tension cannot be measured; it is, however, possible to read the stretch. For yarns manufactured according to different processes the stretch applied during sizing should not always be the same. In the case of threads which are easily stretched in wet condition, it is necessary to apply a higher stretch in order to reach a given tension.

New high-speed sectional warping machine

Jean Gusken GmbH (Germany). *Textile Wkly. 55:* 175-176 (January 21, 1955).

A simple design for all types of yarn.

Non-felting unshrinkable wool: some recent developments. Part 1

B. C. M. Dorset. *Textile Mfr. 81:* 34-37 (January, 1955).

Includes patent and literature references.

WEAVING C 2

Astra automatic mixed weft box loom GMWA

J. Deussen. *Melliand Textilber. (English ed.) 35, No. 2:* 148-150 (1954).

Automatic control of warp tension on looms

N. P. Blyablikov and V. L. Shishanov. *Tekstil. Prom. 14, No. 5:* 22-25 (1954); *in Russian.* Through *Brit. Cotton Ind. Research Assoc. 34:* 934 (1954).

It was found that, using an automatic warp-tension regulator, the number of yarn breakages and fabric defects increased. Experiments, carried out in order to determine the causes, showed that all the parts of the automatic regulator require very careful adjustment and attention. The vibration of the weight lever should be felt (by hand) distinctly, and the pressure of the feeler on the warp should not exceed 3.0 kg. The tension washer should fit neither too tightly nor too loosely on the axis of the yarn beam. In the case of staple yarn, normal shrinkage of the woven fabric can be obtained by maintaining the yarn tension at 20-25 g; the difference between maximum and minimum yarn tension should not exceed 15 g.

Classification of looms

H. Maier. *Melliand Textilber. (English ed.) 35, No. 2:* 140-147 (1954).

A number of German looms and loom devices are described and illustrated.

Domesta double gripper loom

G. Berg. *Melliand Textilber. (English ed.) 35, No. 2:* 150-152 (1954).

Enkalon in weaving

A. Trifunovic and J. G. Vos. *Enka Breda Rayon Rev. 8:* 205-222 (December, 1954); *in Dutch.*

In this article a survey is given of the types of Enkalon yarn which are suitable for weaving. The possible applications and advantages of these yarns are explained. Further, suggestions are

given concerning the processing of Enkalon in weaving. In conclusion, some suitable fabric compositions, with Enkalon yarns in warp and weft, are illustrated.

General consideration of some difficulties in manufacturing ready-made rayon and Enkalon articles

J. A. Kalkman. *Enka Breda Rayon Rev. 8:* 223-229 (December, 1954); *in Dutch.*

A survey is given of the principal difficulties which may arise in manufacturing ready-made rayon and nylon (Enkalon) articles. Causes and origin of these difficulties are set out, as well as the possibilities of preventing them. 4 references.

Jute and linen weaving. Part 2. Chapter 11. Warp let-off arrangements

T. Woodhouse and T. Milne. *Textile Quart. 4:* 222-228 (October-December, 1954).

Loom shuttles

J. Schneider. *Rayonne et Fibres Synthet. 10:* 17-24 (August, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 854 (1954).

Extracts are given of a report published by the the French Ministry for Industry and Commerce (*Industrie Textile No. 2:* 69 (1950)) on the use of shuttles in the French textile industry. In connection with this statistical study, the author discusses the choice of shuttles and suitable woods, normal wear and tear, care of shuttles, causes and consequences of their projection beyond the loom, picking of the shuttles, and their damage by careless handling.

The mechanical efficiency of pneumatic shuttle propulsion in looms

K. H. V. Booth. *J. Textile Inst. 45:* T930-T938 (December, 1954).

The mechanical propulsion of shuttles by pneumatic power in experimental looms, fabric and carpet, is discussed. Calculations are made, subject to certain assumptions, to determine the most efficient combination of air-pressure and time of application to produce a given shuttle speed when the shuttle leaves the box.

Mechanics of tappet shedding

J. Starkie. *Textile Mfr. 81:* 28-32 (January, 1955).

Tappet shedding motions may be designed to produce a positive shed with the heald staves continually under the control of the tappet, or the staves may be moved in one direction only by the tappet and some kind of reversing motion utilized to maintain contact with the tappet profile, i.e., negative shedding.

New dobby for two weft looms for double velvet and double plush

O. Jansen. *Textil-Praxis (English ed.) No. 4:* 161-163 (November, 1954).

A new shuttle box swell and shuttle guard

H. Schulze. *Z. ges. Textil-Ind. 56, No. 19:* 1172-1175 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 934 (1954).

The principles and mechanisms of the two devices are described and illustrated and their advantages pointed out.

KNITTING C 3

Better Dacron tricot fabrics

Textile Age 19: 49-55 (January, 1955).

Research indicates that successful knitting of Dacron on tricot machines depends on the proper handling and throwing of the yarn.

Movement timing and control. Part 6. Circular hosiery machines

J. B. Lancashire. *Textile Recorder 72:* 81-82 (January, 1955).

Pleated and cloque effects in warpknit goods

E. Heukers. *Enka Breda Rayon Rev. (English ed.) 7:* 58-60 (November, 1954).

See *TTD 10:* 1337 (August, 1953).

FABRICS C 4

Service study of twelve cotton broadloom floor coverings

M. L. Hensley and H. M. Fletcher (U. S. Agricultural Research Service). *J. Home Econ. 47:* 110-114 (February, 1955).

Twelve cotton broadloom floor coverings (6 tufted and 6 woven) were studied for performance in use. Resistance to laboratory abrasion and the effect of wear and laundering upon such properties as color, dimensional change, and rate of soiling were determined. 5 references.

Reducing pilling and fuzzing of spun fabrics containing Dacron

E. I. du Pont de Nemours and Co. *Textile Ind. 19:* 143 (February, 1955).

Suggestions are given from du Pont's preliminary bulletin CSB-D-35 based on research and a comprehensive wear test program now underway.

Chemical changes and incrustation in wear tests on viscose rayon staple textiles that have been given prolonged usage

T. Kleinert, V. Mossmer and W. Wincor (Pulp Paper Research Inst. Canada, Montreal). *Textil-Rundschau 9:* 393-395 (1954); *in German.* Through *Chem. Abstracts 49:* 1333 (January 25, 1955).

After a prolonged wear test, rayon fibers undergo chemical changes of the cellulose in addition to splintering and other morphological changes. The degree of polymerization decreases and the number of carboxy groups and mineral content increase. The carboxy groups are neutralized with Ca.

Use of man-made fibers in the production of fabrics for uniforms

E. Haussler. *Melliand Textilber. 36:* 37-39 (January, 1955); *in German.*

The author offers a detailed discussion of the properties of the various types of man-made fibers. He reaches the conclusion that a blend of 15% of rayon staple in uniform fabrics will not impair the quality but improves it markedly. The durability, dimensional stability, crease retention, etc., also remain unimpaired.

Bonded fiber fabric

G. H. Elliott. *Fibres 16:* 9-11 (January, 1955).

Survey of the progress made in the production and use of bonded fiber fabrics.

Crepes. Part 1

D. C. Snowden and G. Hinchliffe. *Brit. Rayon and Silk J. 31:* 58-61 (January, 1955).

Investigation and assessment of fabric constructions. 6 references.

Cashmere and wool mixture fabrics

Wool Record 86: 1319-1320 (December 2, 1954).

How to use cashmere in woolen blends for superior hand and softness.

Combined woolen and worsted fabrics

Wool Record 86: 1439-1440 (December 16, 1954).

Schemes for blending by weave and color.

Diversity in fancy woolen cloths

Wool Record 86: 1553-1555 (December 30, 1954).

Fabrics made by combining two or more counts and qualities.

Design in woven structure. Part 26. Mock gauze weaves

D. C. Snowden. *Wool Rev. 27:* 20-21 (January, 1955).

Further studies in textile design. Part 12. Extra weft backing

Textile Recorder 72: 86-87 (January, 1955).

Double equal plain fabrics

A. L. Moamoun Bayoumi. *Textile Recorder 72:* 94-96 (November, 1954).

Especially suitable for furnishing fabrics, this method of construction makes possible a richness of texture and variety of effect combined with good wearing qualities.

Weaves for webbing

H. Rheda. *Textil-Praxis 9, No. 6:* 539-542 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 770 (October 15, 1954).

Several techniques are specified and illustrated; they can be used in all possible variations and material, according to the purpose for which the webbing is intended.

FINISHING AND CHEMICAL PROCESSING D

Blends of wool and man-made fibers. Part 5. Dyeing and finishing

Textile Recorder 72: 76-78 (January, 1955).

Concluding his articles on the managerial view of wool and the man-made fibers, the author describes the dyeing process and then summarizes the series with his views on the future of these fibers in the wool trade.

Flock printing and coating

Melliand Textilber. (English ed.) 35, No. 2: 186-190 (1954).

A technique of flock printing and coating is described which consists of applying short cut flocks of rayon, cotton, wool, etc. to a surface that has been prepared with an adhesive. Flock material, adhesives, method of applying the flock, and economic aspects are discussed.

Rayon and synthetic fiber finishing. Part 2

R. A. McFarlane. *Dyer 113:* 57-69 (January 7, 1955).

A survey of the history and development of

man-made fiber dyeing and finishing. 12 ref. erences.

Winding yarns for wet processing

M. F. Morris. *Textile Age 19:* 32-36 (February, 1955).

A discussion of problems and practices in package winding for dyeing and wet finishing.

CHEMICAL PROCESSES D 1

Pilot plant production and properties of cyanoethylated cotton

J. Compton, W. H. Martin, B. H. Word, Jr. and R. P. Barber (Institute of Textile Technology). *Textile Research J. 25:* 58-75 (January, 1955).

Structural properties of the cotton fiber, molecular and unit cell structure of cellulose and arrangement in fibrils, chemical modification of cotton fibers by cyanoethylation, properties of cyanoethylated cotton, and market evaluation program are discussed. 44 references.

Progress report on cyanoethylated cotton

J. N. Grant, L. H. Greathouse, J. D. Reid and J. W. Weaver (Southern Regional Research Laboratory). *Textile Research J. 25:* 76-83 (January, 1955).

The mechanism of cyanoethylation of cotton is discussed, and it is shown that for best efficiency the pick-up of sodium hydroxide must not exceed 15% of the weight of the cotton. Measurements of physical properties show that any increases in the breaking strength or elongation of yarns are results of changes in frictional forces. The physical properties of cyanoethylated fabrics reflect the properties of the yarn and are also dependent on fabric construction. Extremely high resistance to flat abrasion is obtained with high cyanoethyl substitution. The density of cyanoethylated cotton is shown to be linearly related to the nitrogen content, and the spread of values obtained has been found to give an estimate of the uniformity of treatment. Cyanoethylated cotton can be dyed by methods developed for polyacrylonitrile fibers such as those employing acid dyes in the presence of cuprous ion, and the dyed samples so produced are suitable for cross sectioning for microscopic examination. The intensity of dye color can be used as a measure of the amount of cyanoethylation. 23 references.

Treating cotton with volatile and toxic chemicals

L. H. Greathouse, C. H. Haydel and H. J. Janssen. (Southern Regional Research Laboratory). *Ind. Eng. Chem. 47:* 187-191 (February, 1955).

A pilot plant unit for treating cotton materials uniformly with flammable or toxic chemicals to provide sufficient quantities of material for extensive laboratory evaluation tests is described in this paper. The equipment has been used to cyanoethylate 50 yards of print cloth and to decrystallize with ethylamine 5 pounds of lint. No injury to operating personnel occurred. Structural materials of all types were tested for resistance to ethylamine, acrylonitrile, and an acetylating solution of acetic acid and anhydride. Chemical modification of cotton to impart special properties such as resistance to rotting, heat, and weathering often requires the handling of toxic or irritating agents. This sealed reactor permits pilot plant treatments and provides useful scale-up data. 5 references.

Special elastic properties of cotton yarn and cloth mercerized without tension

C. F. Goldthwait and A. L. Murphy (Southern Regional Research Laboratory). *Textile Research J. 25:* 47-57 (January, 1955.)

Suitable cotton yarn or cloth mercerized without tension shrinks and its elastic properties are changed. Either yarn or fabric in its shrunk form shows greater than normal elongation, approximately in accordance with the amount of shrinkage that it has undergone. Either, also tends to have increased elasticity. This feature is especially notable at low loads in open-weave fabrics, which usually have considerable stretchability after shrinking. Such elasticity is illustrated by a semielastic and conforming cotton gauze bandage which is in successful commercial production. This type of shrunk material, in heavier goods, appears adaptable to other uses, such as base fabrics for coating when elasticity is a required property of the coated fabric. 13 references.

Improvement of luster of cotton. Part 10. Special swelling treatments and nonthermosetting additives

L. Fourt and H. J. Elliott (Harris Research Laboratories, Inc.). *Textile Research J. 25:* 11-19 (January, 1955).

16 references. Parts 1-9 appeared in the July, 1951, January, 1953, January, February, March, July, and August, 1954 issues of the *Textile Research Journal.*

The Turbinator in textile finishing

J. L. Hausermann and E. Hablutzel. *Melliand Textilber. 36:* 65-68 (January, 1955); *in German.*

The Turbinator carries out an oscillating rotary motion with a small angular deflection and high

frequency around its longitudinal axis, thus causing textile goods running past it to vibrate transversally. This promotes the effect of liquors acting on the goods, especially in dyeing processes. The effect of the apparatus does not increase in proportion to the frequency; vibrations of the order of 20 to 50 per second are used.

Important directions for finishing crepe fabrics

C. Blau. *Z. ges. Textil-Ind. 56, No. 17:* 1072-1075 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 902 (1954).

Directions are given for the treatment of crepe fabrics (desizing, creping, rinsing and soaping), and faults arising from incorrect processing are pointed out.

Crease-resistant finishes on cotton

H. Y. Jennings (Dan River Mills, Inc.). *Textile Research J. 25:* 20-24 (January, 1955).

Crease-resistant cottons from the standpoint of the commercial finisher and his problems.

Some controversial aspects of crease resistance of cellulosic fabrics

A. C. Nuessle, M. N. Fineman and E. O. J. Heiges (Rohm and Haas Co.). *Textile Research J. 25:* 24-40 (January, 1955).

The discovery that synthetic resins could be used to improve the crease recovery of cellulosic fabrics was made on a rather empirical basis more than 25 years ago. Since that time much has been learned about synthetic resins, textile fibers, and their combination in the creaseproofing process. This paper discusses some of the aspects of the subject that are still controversial: (1) Differences between cotton and rayon and the reasons therefor. Factors considered include tensile strength, tear strength, abrasion resistance, permeability of the fibers, resistance to acid hydrolysis. (2) A brief commentary on attempts to make cotton more like rayon. (3) Mechanism of crease recovery, with emphasis on question of covalent crosslinking vs. resin formation. (4) Other aspects of crease resistance, emphasizing subjective characteristics such as fabric hand. 33 references.

Flameproofing of camouflage netting

W. Rudolf. *Melliand Textilber. 36:* 75-79 (January, 1955); *in German.*

This extract from a more voluminous study by the author deals with the following points: (1) demands made on flameproofed camouflage netting; (2) test methods; (3) types of fabrics used; (4) impregnating agents. The author has selected the most interesting data from his original study.

Water- and flame-proofing

A. Taral. *Industrie Textile:* 280-287 (April, 1954); 364-368 (May, 1954); 583-588 (August, 1954); 659-644 (September, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 941 (1954).

This is a general study on water- and flameproofing of textiles to show the complex problems in this field of textile finishing. The methods and processes are reviewed and the relevant British, American, French, Swiss and German patent literature is quoted in the text. Reference is also made to methods for determining the degree of water repellency in the fabrics treated.

Flame-resistant cotton fabrics: an emulsion treatment using an organic phosphorus-bromine polymer

J. G. Frick, Jr., J. W. Weaver and J. D. Reid (Southern Regional Research Laboratory). *Textile Research J. 25:* 100-105 (January, 1955).

Flame-resistant cotton fabrics have been prepared by treatment of the fabric with an aqueous emulsion of an organic polymer, prepared from bromoform and triallyl phosphate. The finish is durable to repeated laundering, and when applied with proper plasticization to fabrics of 8-9 oz weight does not materially change other textile properties. The treatment may be applied on conventional textile finishing equipment. 6 references.

Application of silicone water repellents to cotton

A. A. Cook and N. C. Shane (Arkansas Co. Inc.). *Textile Research J. 25:* 105-110 (January, 1955).

This paper reviews the use of silicone water repellents on cotton fabrics and indicates the trend of results obtained. A considerable amount of information has been accumulated as to the durability of silicone water repellents on cotton when subjected to laundering procedures of various types. Some preliminary data regarding the effect of silicone water repellents on physical properties of cotton fabrics, particularly in regard to tensile strength and abrasion resistance, has also been obtained.

Factors affecting tint removal from staple fibers

AATCC. Philadelphia Section. *Am. Dyestuff Reptr. 44:* P41-P53 (January 17, 1955).

A preliminary survey has been made of the effect of such processing operations as heat setting, crimp setting, can drying (slashing) and aging, as well as of the scouring conditions, on the

efficiency of tint removal from twelve staple fibers. It has been shown that some of the tints used on the older fibers may be used on the new fibers but their removal from all fibers is generally made more difficult by exposure to high-temperature processing operations and is facilitated by increasing the temperature and, where feasible, the pH of the scouring liquor. Tables. 3 references.

Calendering or spread-coating?

D. F. Lott. *Modern Plastics 32:* 104-107, 222-223 (February, 1955).

Comparative data on methods of producing vinyl-coated fabrics, with an analysis of the advantages and disadvantages of each.

Textiles and dry-cleaning

E. Albinson. *Textile Merc. 132:* 20-24 (January 7, 1955).

A general survey of dry cleaning processes and problems and the need for liaison between cleaner and fabric manufacturer.

Abrasion resistance and good performance of cotton fabric

A. A. Kop'ev. *Tekstil. Prom. 14, No. 8:* 35-38 (1954); *in Russian.* Through *Chem. Abstracts 48:* 14219 (November 25, 1954).

Abrasion resistance and over-all performance of cotton fabric are improved by enzymic desizing (with 0.5-3.0 g./1 of amylase D, superbiolaze, etc.) followed by monochlorourea bleach at 50-60° with 2-4 g/1 active Cl and a pH = 4.

Special cases of textile washing techniques

Z. ges. Textil-Ind. 56, No. 14: 901-904; *No. 15:* 944-946 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 775 (October 15, 1954).

Directions are given for the removal of graphite from curtain material, cationic and anionic complexes from fibers, dark stripes in weft direction, and iron stains caused by water or iron-containing machine oil. Streakiness due to color migration, difficulties encountered with marking inks, and washing of cotton waste and raw wool are also discussed.

DYEING AND PRINTING D 2

Coprantine dyes in discharge printing

Ciba Rev. No. 107: 3874-3876 (December, 1954).

A process by means of which very pure white discharges can be produced on Coprantine-dyed grounds is described.

Absorption of copper and manganese by acetate rayon, nylon and Terylene polyester fiber

J. G. Graham and I. M. S. Walls. *Hexagon Digest No. 20:* 18-20 (October, 1954).

An investigation was undertaken to determine the importance of the metal content of dye in the degradation of rubberized fabrics. It was shown that there is no significant difference in the rates of degradation of rubber on the dyed and undyed fabrics.

Difficulties in dyeing textiles of vegetable origin

W. Otto. *Z. ges. Textil-Ind. 56:* 450-453 (1954); *in German.* Through *Chem. Abstracts 48:* 14219 (November 25, 1954).

Some of the causes of uneven dyeing in cotton and other cellulosic fibers are discussed with special emphasis on the importance of the treatment of the fiber prior to dyeing. Various factors which render penetration of the dye difficult are mentioned and how this difficulty can be met by the proper use of dyes and dyeing assistants is described.

Dyeing mixtures of wool and cellulosic fiber with Cibalan dyes

Ciba Rev. No. 106: 3832 (October, 1954).

Dye affinity of viscose rayon. Part 1. Study of methods for determining the dye affinity

A. Ludé and R. Buess. *Ann. Sci. Textiles Belges 2, No. 2:* 21-45 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 939 (1954).

The general methods of measuring the dye affinity of rayon are reviewed and the relation between concentration and reflectance is studied, with reference to the validity of the relationships of Kubelka-Munk, Preston, Utermohlen, and Sellinck. It was found that both the bath-exhaustion method and the measurement of reflectance are accurate methods for determining the dye affinity; by the latter method, the authors were able to determine the dye on the fiber within 2 per cent. 15 references.

Dyeing azoic dyes on acetate

A. J. Hall. *Textile Merc. 131:* 1141-1143 (December 24, 1954).

The discovery was made (Brit. Pat. 706 735) that much purer blue shades resulted when the acetate material containing the dye components (naphthol and base) and diazotized was at once further treated with a solution of a substance capable of swelling the fibers to a limited degree. A recommended dyeing procedure is given.

Dyeing of card slivers, with special reference to dyeing with indanthrene dyes

K. Witzel. *Z. ges. Textil-Ind. 56, No. 19:* 1178-1180 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 939 (1954).

Methods of dyeing card slivers are briefly reviewed and directions are given for the use of indanthrene dyes in dyeing by (1) the graduated temperature method, (2) the stock-vat dyeing technique, and (3) the pigment process with Colloisol dyes (particularly suitable for staple-fiber sliver).

Dyeing of polyester fibers: principles and practices

H. G. Frohlich. *Z. ges. Textil-Ind. 56, No. 17:* 1066-1071 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 899 (1954).

In this review (30 literature references) the author discusses the preparation of polyester fibers (Dacron, Terylene), their dyeing properties, and methods for increasing the diffusion rate of dyes into the fibers (use of carriers or dyeing accelerators, increase of dyeing temperature, and formation of the dye on the fiber). Particular reference is made to three dyeing methods used in practice: (1) dyeing by boiling in presence of swelling agents, (2) high-temperature dyeing without swelling agents (under pressure), and (3) the Thermosol process, developed by du Pont. Dyeing with vat dyes and printing of polyester fibers with Latacyl (du Pont) and Artisil (Sandoz AG) dyes is also mentioned.

Dyeing regenerated protein fibers

R. C. Cheetham and F. W. Lindley (Courtaulds Ltd). *Brit. Rayon and Silk J. 31:* 52-56 (January, 1955).

Review of recent developments and suitable processing conditions for different types of fiber blends and various classes of dyestuffs. 11 references.

Dyeing Terylene polyester fiber

Fibres 16: 27-33 (January, 1955).

A survey of fundamental dyeing characteristics, dyeing with disperse dyestuffs, dyeing with azoic dyestuffs, and the dyeing of blended fabrics.

Fast-color printing

R. W. Jacoby (Ciba Co. Inc.). *Am. Dyestuff Reptr. 44:* P54-P58 (January 17, 1955).

The author discusses broadly the present status of fast-color printing in five sections, one for each of the five types of colors used for such work: vat dyes, leuco esters of vat dyes, insoluble azo dyes, bonded pigments, and special types. For each kind of colorant he considers advantages and disadvantages, the formulation of print pastes, factors influencing results, methods of application, after-treatment for development or fixation of the color, and the effect of some finishing operations on the final fastness properties of the particular color.

Fluorescent dyes

M. Deribéré. *Melliand Textilber. 35, No. 9:* 1037-1038 (1954); *in German.* Through *Brit. Ind. Research Assoc. 34:* 938 (1954).

In this review, the author discusses the principles of fluorescence, the manufacture of fluorescent dyes and their uses, fluorescent inks, treatment of textiles with polymerized resins in which the fluorescent dyes are dissolved, optical bleaches, and problems arising in practice from the use of fluorescent dyes. 11 references.

Modern synthetic fiber dyestuffs demand corrosion resistant cast stainless equipment

E. A. Schoefer. *Textile Age 19:* 42-47 (February, 1955).

Cast stainless alloys in dyeing equipment are discussed.

New developments in the dyeing of spun rayon piece goods

A. Bakker. *Enka Breda Rayon Rev. (English ed.). 7:* 13-22 (November, 1954).

See *TTD 10:* 1491 (November, 1953).

The phthalocyanines

H. Wahl. *Teintex 19, No. 8:* 589-602 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 900 (1954).

In this review, the author discusses the historical development, structure, methods of preparation, physical and chemical properties, uses, main commercial products and other derivatives of phthalocyanines. Bibliography.

Preliminary study of the dyeing of cyanoethylated cotton

F. Fordemwalt and R. E. Kourtz. *Textile Research J. 25:* 84-99 (January, 1955).

This preliminary study takes up differential dyeing tests, laboratory methods for applying vat dyes to cyanoethylated cotton, and the effects of various dyeing processes on cyanoethylated cotton. Tables. Colored photographs. 7 references.

Study of factors which influence the fastness to crocking

AATCC. New York Section. *Am. Dyestuff Reptr. 44:* P34-P40 (January 17, 1955).

The effects of several methods suggested for reducing crocking were measured on both com-

mercially and experimentally dyed cloth by standard testing procedures and by means of refined methods. Data and illustrations show interlaboratory reproducibility of crocking measurements and the effects on crocking of different degrees of fabric prepare, different classes of dye and different methods of application of the same dye, and an evaluation of a few regularly applied aftertreatments are given. 16 references.

Vat dyes in screen printing

E. Krahenbuhl. *Ciba Rev. No. 107:* 3873-3874 (December, 1954).

Suggestions are given for the successful control of screen printing using vat dyes.

Bronze prints in screen printing

A. Franken. *Textil-Praxis (English ed.) No. 4:* 186-189 (November, 1954).

Special techniques and materials for producing bronze prints are discussed.

Modern machines for roller printing

A. Franken. *Melliand Textilber. (English ed.) 35, No. 2:* 180-186 (1954).

German roller printing machines are described. See *TTD 11:* 381 (September, 1954).

Screen printing

A. Franken. *Ciba Rev. No. 107:* 3835-3870 (December, 1954).

A brief history of screen printing; economics; aesthetic problems; mechanics; manufacture and processing of the screen; printing pastes, textile substrates and aftertreatment of the printed goods; and thickeners are included. Bibliography.

Subsequent soaping of dyed and printed fabrics

W. Otto. *Textil-Praxis (English ed.) No. 4:* 179-181 (November, 1954).

See *TTD 11:* 384 (September, 1954).

MECHANICAL PROCESSES D 3

Efficient selvage trimming

Sam. Vollenweider AG, Switzerland. *Textile Wkly. 55:* 118 (January 14, 1955).

In the new Type WAM machine the cloth is guided through several tension bars which give a strong tension to the selvage. The cutting apparatus cuts open the loop-threads which are then removed and sucked away by a vacuum cleaner.

Simili mercerizing: a finishing process for cotton fabrics

Melliand Textilber. (English ed.) 35, No. 2: 172-174 (1954).

Simili mercerizing is a cotton finishing process which imparts a luster to the material similar to that achieved with the caustic soda treatment (but less expensive) and possessing a certain degree of fastness to washing. It is a calendering process carried out on a heavy hydraulic calender without the application of chemicals.

DRYING D 4

Automatic festoon dryer for back greys

Melliand Textilber. (English ed.) 35, No. 2: 190-192 (1954).

The back grey is used for reinforcing material for use in printing all types of fabrics. Dyeing machinery for back greys is described and illustrated.

Drying chamber for machine printed fabrics

Melliand Textilber. (English ed.) 35, No. 2: 194-196 (1954).

The German drying chamber system Zimmer is described and illustrated.

Drying processes in the textile industry

R. Roesler. *Melliand Textilber. 35, No. 9:* 1020-1021; *No. 10:* 1138-1140 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 942 (1954).

Various drying processes and their uses are compared and special reference is made to hot-air drying, its conformity to physical laws, and its economical aspects. Examples, and equations for calculating the efficiency of these installations, are given.

Electronic moisture measurement on drying machines

W. Weil. *Textil-Rundschau 9, No. 9:* 461-464 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 942 (1954).

Methods for testing the moisture content are reviewed, with special reference to those based on certain electrical properties of textile fibers during drying (measurements of the ohmic resistance, dielectric constant, and electrostatic charge). The Drytester measuring apparatus is described and illustrated. It can be used on stenters, sizing machines, etc.

Gas can cut textile costs

G. R. Van Kampen (Red-Ray Manufacturing Co.). *Textile Age 19:* 66-71 (February, 1955).

Gas burners may cut costs when used for drying, baking or polymerization.

Heat-setting of woven and knitted Enkalon cloths

J. Andriessen. *Enka Breda Rayon Rev. (English ed.) 7:* 2-10 (November, 1954).

See *TTD 10:* 1488 (November, 1953).

The hotflue in the continuous dyeing of fabrics

F. Hagen. *Melliand Textilber. (English ed.) 35, No. 2:* 174-178 (1954).

The hotflue is important in textile printing and dyeing processes. It is used principally as a chemical predryer for developing dyestuffs. Drying in continuous dyeing is discussed. Diagrams and illustrations.

Methods for achievement of improved drying capacities

L. Walter. *Melliand Textilber. (English ed.) 35, No. 2:* 198-202 (1954).

Suggestions are given to the textile plant engineer in examining the basic properties of his warm air drying equipment with a view to (a) increased production and uniformity of product, and (b) thermal efficiency of the drying operation.

Setting of nylon fabrics

N. B. Furvik, A. Bernskiold and N. Gralén. *Medd. Svenska Textilforskningsinst No. 45:* 1-20 (1954); *in Swedish.* Through *Brit. Cotton Ind. Research Assoc. 34:* 941 (1954).

This publication comprises a literature review on various methods for setting nylon fabrics, and a report on experience (examination work) carried out in 1950-51 at the Chalmers Technical High School. The setting was carried out with hot air and saturated steam at various pressures, respectively, and the degree of setting was measured, as a function of time and temperature, by using the method for measuring the shrinkage of nylon fabrics in water. 19 references.

Tensionless drying of rayon staple slivers

Melliand Textilber. (English ed.) 35, No. 2: 196-198 (1954).

German Fleissner systems are described and illustrated with diagrams.

TESTING AND MEASUREMENT E

Applications of the "black-and-white" method for textile measurements

H. Kob. *Melliand Textilber. 35:* 1333-1335 (December, 1954); *in German.*

The black-and-white method is a testing procedure that requires only very simple technical equipment and permits measuring results to be arranged in a continuous evaluation scale. It can be used in all cases where it is necessary to ascertain rapidly the best and the poorest from a number of similar test pieces (e.g. yarns, sewing threads, etc.) and to arrange the others with a fair degree of precision in their order of quality.

Modern microscopy. Part 1. Introduction

A. E. J. Vickers. *Research 8:* 17-21 (January, 1955).

In this introduction, Dr. Vickers provides a brief outline of the various types of instruments and methods now available. The series will deal with most aspects of microscopy including microscopic interferometry, the reflecting microscope and its applications outside the visible spectrum, new developments in electron microscopy and the flying spot microscope.

FIBERS E 1

Comparative testing of the moisture content of textiles

H. Kirchner. *Textil- u. Faserstofftech. 4, No. 6:* 365-368 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 786 (October 15, 1954).

Tests are described which were carried out with the purpose of ascertaining whether the Weiss Universal Rapid Electrometer, system F8W/K is able to determine accurately the moisture content of textile raw materials, and whether the results are comparable with those obtained by the conditioning device of Hahn. Faults and sources of errors were found in both devices, but the electric moisture meter gives sufficiently accurate results and has the advantage of rapid, convenient and simple operation and low power consumption.

Effect of pen friction during tensile strength testing of fibers

F. Winkler. *Faserforsch. u. Textiltech. 5, No. 8:* 358 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 905 (1954).

When testing the tensile strength of fibers and recording the stress-elongation diagrams, the friction between the recording pen and the paper causes an error of about 200 mg, which considerably affects the test results. The tensile-strength values recorded in this way for damaged viscose staple fiber were found to be 75 per cent of the actual strength of the tested sample. This error should be taken into account particularly in the case of fibers with low tensile strength.

The measurement of medullation or hairiness in wool

Wool Sci. Rev. No. 13: 33-46 (November, 1954).

A critical survey of the methods that have been used for the measurement of hairiness. 12 references.

Measuring the birefringence of textile fibers

H. de Vries. *Enka Breda Rayon Rev. (English ed.) 7:* 169-176 (November, 1954).

See *TTD 10:* 1498 (November, 1953).

Measuring the denier of single fibers

S. L. Dart and L. E. Peterson (American Viscose Corp.). *Skinner's Silk and Rayon Record 29:* 66-68 (January, 1955).

A new and improved technique and the method of constructing a suitable instrument, the vibrascope, is described in detail.

Relation between permeability to air and the fineness of a fibrous mass

D. De Meulemeester, G. Raes and T. Fransen. *Ann. Sci. Textiles Belges 2, No. 2:* 49-78 (1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 944 (1954).

The microscopical and gravimetric methods of determining the fineness of cotton fibers are briefly reviewed, and the method based on permeability to air by the use of the Micronaire apparatus is described, with special reference to the modification of the method. It is shown that the Causticaire method proposed by the Department of Agriculture in Washington gives for cottons with low maturity a maturity index which differs significantly from the percentage of mature fibers. However, the correlation between the gravimetric fineness and the Causticaire fineness and the Causticaire maturity index, respectively, is significant and the error relatively small.

The relationship between the various parameters of technological value for fibers

A. Barella. *Industrie Textile:* 321-328 (May, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 944 (1954).

In this review, the author discusses the results obtained by studying the relation between the variation coefficients of various parameters, arrived at either by purely scientific considerations or by experiments. The items discussed comprise the relation between the variation coefficient of weight/length unit, cross-section/bursting strength, apparent diameter of the fiber/bursting load, and twist/breaking strength. 14 references.

Staining tests reveal rayon structure

Skinner's Silk and Rayon Record 29: 70-72 (January, 1955).

Various staining tests are described. References to the literature.

YARNS E 2

The coefficient of hairiness of yarns

A. Barella. *J. Textile Inst. 45:* P699-P703 (December, 1954).

A consideration of various conceptions on which the coefficient of hairiness is based and the relation between the coefficient of hairiness and the hairiness rating scale devised by W. J. Onions.

Photoelectric measurement of the irregularity and the hairiness of worsted yarn

W. J. Onions and M. Yates (Leeds Univ.). *J. Textile Inst. 45:* T873-T885 (December, 1954).

The effect of the surface hairs upon the measurement of yarn irregularity and diameter by a photometer has been studied. The increase in the measured variation, due to this cause, depends upon the width of the photometer aperture. The effect of surface hairs upon the mean diameter of a worsted yarn measured photometrically may be used to assess the degree of hairiness quantitatively. 8 references.

Determination of the liveliness of synthetic yarns

J. Lako. *Enka Breda Rayon Rev. (English ed.) 7:* 89-92 (November, 1954).

Both method and instrument are described in detail. The principle of this test derives from the Shirley Institute snarling test.

Determination of the yarn count of rayon yarn

J. Prins. *Enka Breda Rayon Rev. (English ed.) 7:* 132-138 (November, 1954).

Three methods are described: (1) the accurate method, (2) the abridged method, (3) the tentative test.

Electronic yarn tension recording equipment

K. J. Butler and W. J. Morris (British Rayon Research Assoc.). *Skinner's Silk and Rayon Record 29:* 60-63 (January, 1955).

Electronic yarn tension recording equipment which has been in use in the laboratory and on industrial winding machines for two years is described. Particular attention is paid to the satisfactory damping of the transducer and to the

effects of inertia of the transducer pulleys. Typical examples of its use in industry are given.

Estimation of the tensile strength and elongation at break of yarns

J. Lako.. *Enka Breda Rayon Rev. (English ed.) 7:* 93-97 (November, 1954).

Test method and instruments are described and illustrated.

On the characteristics of yarn tension devices

J. A. Kalkman. *Enka Breda Rayon Rev. (English ed.) 7:* 62-88 (November, 1954).

See *TTD 11:* 243 (June, 1954).

Performance of the lea strength test on spun yarn

J. Onderstal. *Enka Breda Rayon Rev. (English ed) 7:* 124-131 (November, 1954).

See *TTD 10:* 1499 (November, 1953).

Testing in the worsted mill. Part 2

Wool Sci. Rev. No. 13: 19-32 (November, 1954).

Part 1 dealt with the control methods which had been found valuable in the firm of Peltzer et Fils, Verviers, Belgium, for controlling worsted sliver production. In that article the intervention of the laboratory into carding and preparer gilling was exemplified; in the present article the subject is carried on into the stages of combing and worsted drawing.

Torsional resilience stored in spun yarns (a basic study of twist setting)

G. Osawa. *J. Soc. Textile Cellulose Ind. Japan 10, No. 8:* 352-356 (1954); *in Japanese (English summary).* Through *Brit. Cotton Ind. Research Assoc. 34:* 909 (1954).

The untwisting of yarns or formation of snarls depends upon the torsional resilience stored in the yarn, after spinning, as potential energy. An equation for calculating the torsional resilience is given.

Yield point meter for measuring the elastic limit load

K. Halpach. *Melliand Textilber. (English ed.) 35, No. 2:* 170 (1954).

An instrument is described which is used for determining critical rayon yarn tension in the mill.

FABRICS E 3

Methods for testing the texture of textiles

J. Mandou. *Bull. Inst. Textile France No. 47:* 59-68 (June, 1954); *in French.* Through *Brit. Cotton Ind. Research Assoc. 34:* 947 (1954).

After having defined what is meant by optimum textures, the author shows that it is not possible to determine the wear and tear properties of a textile product without actual use, and it is absolutely necessary to carry out statistical tests on large numbers, the tests being based, if possible, on laboratory data.

Time-saving method for testing the fast-to-light qualities of textile fiber materials with artificial light

A. Sippel. *Textil-Praxis (English ed.) No. 4:* 171-174 (November, 1954).

See *TTD 10:* 1536 (December, 1953).

OTHER E 4

Insolubility in cuprammonium hydroxide as a means of detecting crosslinking in chemically modified cotton

W. A. Reeves, G. L. Drake, Jr., O. J. McMillan, Jr., and J. D. Guthrie (Southern Regional Research Laboratory). *Textile Research J. 25:* 41-46 (January, 1955).

Native cellulose dissolves in cuprammonium hydroxide solution, but when it is crosslinked, it becomes a space polymer and is insoluble in this reagent. A method of detecting alkali-stable crosslinks in cotton is presented. The sample to be tested is shaken with cuprammonium hydroxide solution for 17 hours. If it dissolves completely, cellulose chains are not crosslinked, but if it is partially insoluble, crosslinking is indicated. Partially insoluble cellulosic material appears in the cuprammonium hydroxide as granules that are easily detected visually. 22 references.

Measuring color

H. J. Selling. *Enka Breda Rayon Rev. (English ed.) 7:* 140-153 (November, 1954).

Spectrophotometers, photo-electric colorimeters, prediction of dye recipes, use in practice, whiteness, measuring whiteness, measuring the whiteness of blued paper, and application of the whiteness formulas. 15 references.

Discharge printing on natural silk: colorimetric estimation of the discharge properties of dyes

E. Cowgill. *Hexagon Digest No. 20:* 3-6 (October, 1954).

This paper shows that measurement of the discharge properties of dyes or print pastes can be carried out quite satisfactorily by the objective methods of colorimetry to give excellent agree-

ment with subjective assessments, and that these methods may be of value in obtaining a permanent record of discharge processes or in carrying out measurements on small areas of a full-scale printed fabric where psychological effects may influence visual assessment.

Qualitative and quantitative analysis of vat dyes by paper chromatography

E. Klingsberg. *J. Soc. Dyers Colourists 70:* 563-567 (December, 1954).

By operating in a nitrogen atmosphere, it has been found possible to effect chromatographic separations of vat dyes in leuco form on strips of paper or synthetic fibers. The technique has been applied to the quantitative analysis of model mixtures, employing spectrophotometric determination of the individual constituents after their chromatographic isolation from the mixture. 8 references.

Rapid determination of bound formaldehyde in cellulosic materials

T. N. Kleinert and J. Bauer. *Melliand Textilber. 35:* 868-870 (August, 1954); *in German. Brit. Cotton Ind. Research Assoc. 34:* 861 (1954).

The direct method for determining the bound formaldehyde in cellulosic fabric and textiles, treated with formaldehyde or formaldehyde condensation products, consists in hydrolyzing the material in 10 ml. of a mixture containing 0.05 g. chromotropic acid and 10 ml. phosphoric acid (85 per cent), and measuring colorimetrically the red-violet coloration formed. Any delustring agents and pigment present can be removed from the hydrolysates by centrifuging and/or filtration, the colorimetric determination being carried out directly on the clear residual liquid. A bibliography of 44 literature and patent references is given, referring to various finishing processes and identification tests for the finishing agents used.

Seventy years of colorimetry

G. J. Chamberlain (Tintometer Ltd). *Am. Dyestuff Reptr. 44:* P18-P21, P28 (January 3, 1955).

The Lovibond system of color measurement is related by the author in a simplified nonmathematical manner to the CIE (international) system of color transformation. He also describes how a modified Lovibond Tintometer can be employed to interconvert instantly between Lovibond glasses and Judd's uniform chromaticity scale. Some interesting new applications of visual color measurement are made to scientific and commercial problems. 3 references.

Studies on the acceptability and perceptibility of fading

C. A. Lermond (Northern New England Section, AATCC). *Am. Dyestuff Reptr. 43:* P885-P890 (December 20, 1954).

An introductory study has been made for the purpose of determining the magnitude of the variations involved in evaluation by visual and instrumental means. The experiments were carried out by eighteen observers on eighteen shades strategically scattered throughout textile color space. Three degrees of fading were exhibited by each shade. The results are equivalent to nearly 1,000 matchings. The average equivalence of fade from one region of color space to another, in terms of the Adams-Nickerson Color Difference formula is determined. The problem of metamerism is investigated in a second experiment involving fourteen samples and sight observers, each observer repeating at least once. In all cases the basic colorimetric data are provided in order to make the data useful for trials of newly developed color-difference formulas. 5 references.

Use of fading lamps for determining light fastness

K. McLaren. *J. Soc. Dyers Colourists 70:* 553-556 (December, 1954).

There are three possible causes of the significant differences sometimes experienced between fading-lamp and daylight fastness figures—spectral composition, temperature, and moisture content. Although there are marked differences between the spectral composition of fading lamps and sunlight, on theoretical grounds these would not appear to be the main cause of large discrepancies. The most likely cause is surface moisture content during exposure and this depends on surface temperature and on the relative humidity of the surrounding air. It will be necessary to investigate these factors in detail before a specification for fading-lamp operation can be issued. 18 references.

rH measurements in the textile industry

E. Brunnschweiler. *SVF Fachorgan Textilveredlung 9, No. 5:* 234-242; *No. 6:* 263-273 (1954); *in German.* Through *Brit. Cotton Ind. Research Assoc. 34:* 778 (October 15, 1954).

In this review (28 literature references) the author discusses the theory of oxidation-reduction processes, the redox potential, the term rH and its association with pH, various potentials, and measurements of the redox potential, and describes the occurrence of redox processes during washing, boiling, and kier-boiling, bleaching with oxidizing agents (hydrogen peroxide, hypochlorite and sodium chlorite) and reducing agents (sodium

dithionite and sodium or zinc formaldehyde sulfoxylate) and vat-dyeing. Practical application of redox measurements in dyeing and printing, and methods for carrying out the measurements in the dye-bath, dyeing of Orlon, and redox measurements in the laboratory are also pointed out.

Relative humidity registrations

C. G. Booy. *Enka Breda Rayon Rev. (English ed.) 7:* 24-46 (November, 1954).

See *TTD 10:* 1498 (November, 1953) and *TTD 11:* 264 (June, 1954).

Rating detergent performance

E. M. McCabe (Colgate-Palmolive Co.). *Soap and Chemical Specialties 30:* 44-47, 81 (December, 1954); 42-43, 177 (January, 1955).

A discussion of the manner in which detergents are presently evaluated and the reasons for a lack of standard test methods.

Launderometric determination of CMC in detergents

J. V. Karabinos and G. E. Kapella (Blockson Chemical Co.). *Soap and Chemical Specialties 30:* 48-49, 113 (December, 1954).

A launderometric procedure is described for assaying carboxymethylcellulose for its detergent activity particularly with respect to the prevention of soil redeposition.

INDUSTRIAL ENGINEERING F

Modern applications of work study

G. I. Gibbons. *Textile Merc. 131:* 1170-1174 (December 31, 1954).

A discussion, in general terms, of the administrative procedures in introducing work method changes and job assignment changes in a mill, including all the steps from selling management on the scheme to attainment of operator acceptance. The value of trial periods and proper incentives is stressed.

MACHINERY AND MAINTENANCE F 1

Machine interference

D. Brunnschweiler (Univ. of Manchester). *J. Textile Inst. 45:* T886-T895 (December, 1954).

"Regular" patrolling, whereby an operative tends machines according to a pattern, is compared with "irregular" patrolling where no definite order of attention is specified. Ancillary work, including walking time, is taken into account, and the two methods of patrolling are applied to winding machine production calculations, under conditions particularly favorable to regular patrolling. The methods of calculation adopted with irregular patrolling are those outlined by Benson, Miller and Townsend (see *TTD 10:* 1943 (1953)). 3 references.

QUALITY CONTROL F 3

Process and product control in the AKU spun rayon yarn experimental mills

A. Visser. *Enka Breda Rayon Rev. (English ed.) 7:* 154-168 (November, 1954).

See *TTD 10:* 1506 (November, 1953).

OTHER F 4

Coupling heat and power in textile mills

J. Zeitel. *Melliand Textilber. (English ed.) 35, No. 2:* 202-206 (1954).

Steps to take in planning new heat and power facilities for a textile mill.

Mill of the future. No. 6. Design bolsters employee morale

J. F. Hayes. *Textile Age 19:* 58-60 (January, 1955).

This is modern mill design No. 6 in a series based on work done by a group of students in the School of Architecture at the Massachusetts Institute of Technology. One of the major considerations in the design of this mill was that it should be a satisfactory social environment in which to work.

Mill of the future. No. 7. Plant must be an efficient tool

R. G. Dyck and W. Stewart. *Textile Age 19:* 24-30 (February, 1955).

MISCELLANY H

Annual review of new equipment and supplies and new dyes and chemicals

Textile World 105: 99-146 (February, 1955).

Case history reports

Textile Ind. 119: 103-134 (February, 1955).

66 case history reports tell how textile mills are putting modern equipment to work on a profitable basis.

PATENT CHECKLIST

U. S. Patents may be obtained from the U. S. Patent Office, Washington 25, D. C., for 25 cents per copy. Photostatic copies of foreign patents are available. Charges for these photostats are based on the number of pages in the patent.

FIBERS A

NATURAL FIBERS A 1

Process for degumming vegetable textile fibers

J. L. J. Lourd (France). USP 2 700 608, January 25, 1955.

MAN-MADE FIBERS A 2

Staple puller for textile fibers

R. E. McKenna and J. A. Herrera. USP 2 700 187, January 25, 1955.

YARN PRODUCTION B

Process for the manufacture of yarns of stiff hair or filaments of synthetic material unfit for spinning

G. Kufner (Germany). BP 712 187, July 21, 1954. Through *BCIRA 34:* 893 (1954).

Method of forming roving hydraulically

L. M. Keeler. USP 2 698 972, January 11, 1955.

Method of making yarn (sliver to yarn)

R. C. Wilkie (to Pacific Mills). USP 2 698 971, January 11, 1955.

Tow crimper

D. B. Wicker (to American Cyanamid Co.). USP 2 698 970, January 11, 1955.

Yarn guide for traverse

W. W. Egee (to Fletcher Works, Inc.). USP 2 699 905, January 18, 1955.

OPENING, PICKING, FIBER PREPARATION B 1

Apparatus for the extraction of fibrous materials from a conveying stream of air

E. Kastrup and W. Kastrup (Germany). BP 712 075, July 14, 1954. Through *BCIRA 34:* 891 (1954).

Pneumatic condensers for textile fibrous materials

Z. Szaloki (to T.M.M. (Research) Ltd). BP 712 063, July 14, 1954. Through *BCIRA 34:* 891 (1954).

Picker bar and tooth assembly

W. Mick. USP 2 700 189, January 25, 1955.

CARDING AND COMBING B 2

Carding of cotton

E. Bettoni. BP 714 640, September 1, 1954. Through *BCIRA 34:* 932 (1954).

Card clothing cleaner

F. E. Rowe, Jr. (to Abington Textile Machinery Works). USP 2 700 190 January 25, 1955.

DRAWING AND ROVING B 3

Drafting head in which the top rollers are weighted by means of curved arms and saddles

E. Toenniessen (Germany). BP 712 776, July 28, 1954. Through *BCIRA 34:* 892 (1954).

Drafting system of the single-apron type

W. H. Watson and R. J. Summers (to T.M.M. (Research) Ltd). BP 712 512, July 28, 1954. Through *BCIRA 34:* 892 (1954).

Top roller unit for a drafting head

N. Hooper (to Tweedales and Smalley (1920) Ltd). BP 712 753, July 28, 1954. Through *BCIRA 34:* 892 (1954).

Textile roll covering

J. W. Baymiller (to Armstrong Cork Co.). USP 2 699 577, January 18, 1955.

SPINNING, WINDING, TWISTING B 4

Doffing and donning device for spinning machines

J. B. Busquets and P. B. Forgas (Spain). BP 712 423, July 21, 1954. Through *BCIRA 34:* 893 (1954).

Equalizing the speed of yarns or threads in doubling twisting

Doutors Soc. anon. Holding (Belgium). BP 712 840, August 4, 1954. Through *BCIRA 34:* 893 (1954).

High-speed spindle

J. M. Saret and R. M. Barrera (Spain). BP 712 200, July 21, 1954. Through *BCIRA 34:* 892 (1954).

Means for traversing a ring rail

A. Davenport (to Ernest Scragg & Sons Ltd). BP 712 496, July 28, 1954. Through *BCIRA 34:* 892 (1954).

One suction nozzle apparatus for trapping broken ends and for cleaning lower delivery roller of drafting system

Lufttechnische GmbH. BP 714 259, August 25, 1954. Through *BCIRA 34:* 933 (1954).

Spinning frame with suction device for broken ends and compressed air system for feeding roving to twist tubes

Spinnbau GmbH. BP 714 090, August 25, 1954. Through *BCIRA 34:* 933 (1954).

Variable-speed operating mechanism for continuous spinning

F. Calzone (Italy). BP 712 012, July 14, 1954. Through *BCIRA 34:* 893 (1954).

Wet spinning of natural fibers

A. Bolelli (Italy). BP 714 172, August 25, 1954. Through *BCIRA 34:* 933 (1954).

Spindle for rotating an out-of-balance package of yarn at high speed

C. C. Bell (to Universal Winding Co.). USP 2 699 033, January 11, 1955.

Spindle mounting

R. E. Reason and G. O. Rawstron (to Kapella Ltd). USP 2 701 170, February 1, 1955.

Thread runoff device for double twist spindles

K. Landolt (Switzerland). USP 2 699 032, January 11, 1955.

Automatic yarn winding machine

H. L. Muschamp and J. R. Grady (England). USP 2 701 689, February 8, 1955.

Winding machine traverse device

H. L. Muschamp and J. R. Grady (England). USP 2 701 108, February 1, 1955.

YARNS B 5

Multilayer yarn package

W. S. Russell, Jr. (to Celanese Corp.). USP 2 699 866, January 18, 1955.

FABRIC PRODUCTION C

Marking selvages with metallic powders

P. Lebuy (France). BP 712 437, July 21, 1954. Through *BCIRA 34:* 904 (1954).

Control system for web handling machines

P. N. Smith and J. W. Hicks, Jr. (to Deering Milliken Research Trust). USP 2 698 982, January 11, 1955.

Fiber web forming machine

F. M. Buresh and H. H. Langdon. USP 2 700 188, January 25, 1955.

Selecting clearer for clearing spun yarns

E. Doll (France). USP 2 700 204, January 25, 1955.

WARPING, SLASHING, YARN PREPARATION C 1

Automatic pirn winders

D. H. Smith. BP 712 617, July 28, 1954. Through *BCIRA 34:* 896 (1954).

Automatic pirn winding machines

W. Reiners (Germany). BP 712 851, August 4, 1954. Through *BCIRA 34:* 896 (1954).

Bobbin winding apparatus

Barmer Maschinenfabrik AG (Germany). BP 712 280, July 21, 1954. Through *BCIRA 34:* 896 (1954).

Pirn winders

H. L. Muschamp. BP 714 242, August 25, 1954. Through *BCIRA 34:* 934 (1954).

Precision cross-winding of yarns and the like

F. Oswald (to Wm. Ayrton & Co. Ltd). BP 712 257, July 21, 1954. Through *BCIRA 34:* 896 (1954).

Apparatus for sizing yarn

I. L. Griffin. USP 2 698 984, January 11, 1955.

Closed cover for slasher size boxes

I. L. Griffin. USP 2 698 983, January 11, 1955.

Sizing apparatus for warp and selvage threads

F. L. Nimmons. USP 2 700 203, January 25, 1955.

Warp stop motion

K. W. Horne. USP 2 700 880, February 1, 1955.

Yarn sizing apparatus for slashers and method

I. L. Griffin. USP 2 698 985, January 11, 1955.

WEAVING C 2

Automatic pick-and-pick motion in looms

R. Foisy, J. A. Vezina and L. Forestier. BP 714 446, August 25, 1954. Through *BCIRA 34:* 936 (1954).

Device for inserting weft from stationary supply packages without employing electro-magnets

M. Claeys (France). BP 714 609, September 1, 1954. Through *BCIRA 34:* 935 (1954).

Device for measuring the unwinding tension from a package inside a shuttle

J. J. Vincent and P. H. Wolfenden (to British Cotton Ind. Research Assoc.). BP 714 649, Sept. 1, 1954. Through *BCIRA 34:* 949 (1954).

Four-color weaving looms

T. Ciarloni (Italy). BP 712 836, August 4, 1954. Through *BCIRA 34:* 896 (1954).

Heald-shaft frame, the top and bottom bars of which each consist of a profiled metal element

S. A. Fabbriche Formenti (Italy). BP 714 692, September 1, 1954. Through *BCIRA 34:* 935 (1954).

Jacquards

H. Hardaker (to John T. Hardaker Ltd). BP 712 549, July 28, 1954. Through *BCIRA 34:* 897 (1954).

Shuttleless looms with continuous weft feeding

R. Dewas. BP 714 334, August 25, 1954. Through *BCIRA 34:* 935 (1954).

Electromagnetic device for weft-mixing in weaving looms with drop boxes

J. Picanol (Belgium). USP 2 700 990, February 1, 1955.

Harness cord for looms

B. E. Green. USP 2 700 398, January 25, 1955.

Jacquard for weaving looms

O. Dalle (to Societe des Mecaniques Verdol, France). USP 2 701 585, February 8, 1955.

Loom grate cleaner

C. M. Culpepper and J. Culpepper. USP 2 701 587, February 8, 1955.

Loom harness

E. Pfarrwaller (to Sulzer Freres, Societe Anon.). USP 2 700 399, January 25, 1955.

Method of making sweepsticks

L. R. Heim (to the Heim Co.). USP 2 701 409, February 8, 1955.

Pick-and-pick automatic bobbin changing loom

L. Franceschini (to Officine Galileo Societa per Azioni, Italy). USP 2 699 187, January 11, 1955.

Pile wire loom

A. Crawford (to Mohawk Carpet Mills, Inc.). USP 2 701 586, February 8, 1955.

Reed and shuttle guide for gripper looms

F. J. Pusateri (to Crompton & Knowles Loom Works). USP 2 699 185, January 11, 1955.

Selvage loop retainer

H. F. Roberts. USP 2 700 400, January 25, 1955.

Shuttle check for looms

C. P. Bergstrom and C. Darwin (to Crompton & Knowles Loom Works). USP 2 699 184 January 11, 1955.

Support for shifting shuttle boxes

A. C. Krukonis (to Crompton & Knowles Loom Works). USP 2 699 183, January 11, 1955.

Tip for weaving shuttles

W. J. Gosselin (to U. S. Bobbin & Shuttle Co.). USP 2 699 186, January 11, 1955.

KNITTING C 3

Coulier or draw mechanism of straight bar knitting machines

K. W. Wickardt (to Hosemaster Machine Co. Ltd). USP 2 701 457, February 8, 1955.

Electric controller stop motion for knitting machines

J. Wachsman. USP 2 700 881, February 1, 1955.

Latch needle

H. C. Noe (to Kidde Mfg. Co., Inc.). USP 2 699 053, January 11, 1955.

Method of and machine for warp knitting

P. N. Peters. USP 2 699 658, January 18, 1955.

Motion control device for knitting machines

E. Bellini (to Vanity Fair Mills, Inc.). USP 2 700 285, January 25, 1955.

Warp knitting machine

A. Zwingenberger (to Karl Liebrandt, Germany). USP 2 699 052, January 11, 1955.

Warp tension control device for knitting machines

H. C. Noe (to Kidde Mfg. Co., Inc.). USP 2 699 051, January 11, 1955.

Yarn carrier finger and flat ended yarn carrier tube for knitting machines

F. Scarborough. USP 2 700 879, February 1, 1955.

FABRICS C 4

Manufacture of wire reinforced plastic material

F. C. Hester and C. A. Tierney (to Polychemical Developments Ltd). BP 712 047, July 14, 1954. Through *BCIRA 34:* 897 (1954).

Methods of and apparatus for cutting nylon fabric and sealing the edges

D. L. Lewis (to General Electric Co. Ltd. and British Nylon Spinners Ltd). BP 712 069, July 14, 1954. Through *BCIRA 34:* 897 (1954).

Nylon fabrics for aerial targets

C. T. Suchy and D. J. McAuley. BP 714 264, August 25, 1954. Through *BCIRA 34:* 936 (1954).

Tennis balls using Terylene

S. G. Ball (to Dunlop Rubber Co. Ltd). BP 714 481, September 1, 1954. Through *BCIRA 34:* 936 (1954).

A three-ply fabric for transmission belting

G. E. Watts (to J. H. Fenner and Co.). BP 712 040, July 14, 1954. Through *BCIRA 34:* 897 (1954).

Pile fabric

H. J. Smiley (to James Lees and Sons Co.). USP 2 700 401, January 25, 1955.

Method of making embossed pile fabrics

W. A. Rice (to Mohawk Carpet Mills, Inc.). USP 2 700 205, January 25, 1955.

Process of producing carved or embossed effects in a pile fabric formed with piles of equal height

R. R. Matthews (to the Firth Carpet Co.). USP 2 699 593, January 18, 1955.

Wool substitute blended fabric

G. Bloch. USP 2 701 406, February 8, 195

FINISHING AND CHEMICAL PROCESSING D

Apparatus for handling tubular textile fabrics

S. Cohn, J. G. Walter and E. Cohn (to Sam coe Holding Corp.). USP 2 700 543, Januar 25, 1955.

Method of treating tubular knitted fabri after wet processing

F. R. Redman, J. Hamilton and J. P. Wilso (to Proctor and Schwartz, Inc.). USP 700 202, January 25, 1955.

CHEMICAL PROCESSES D

Crease-resist treatment of cotton and rayon fabrics

J. T. Marsh (to Tootal Broadhurst Lee C Ltd). BP 712 098, July 21, 1954. Throug *BCIRA 34:* 904 (1954).

Fluorescent brightening agents

J. D. Kendall and G. F. Duffin (to Ilford Ltd) BP 712 764, July 28, 1954. Through *BCIR 34:* 902 (1954).

Production of pile fabric by electrostati flocking

F. H. Lane (to Dunlop Rubber Co. Ltd). B 712 240 and 712 251, July 21, 1954. Throug *BCIRA 34:* 904 (1954).

Method for imparting dimensional stability to fabric

J. A. Newman (to E. I. du Pont de Nemour and Co.). USP 2 699 592, January 18, 195

Method of making patterned cellulose-superpolymer fabrics by swelling the cellulose

C. Bener (Switzerland). USP 2 699 374 January 11, 1955.

Permonosulfuric acid treatment of wool for shrink resistance

E. T. Fell (to Stevenson (Dyers) Ltd). US 2 701 178, February 1, 1955.

Process of providing textile material wit an antistatic finish

O. P. Cohen and M. J. Scott (to Monsant Chemical Co.). USP 2 700 001, January 1 1955.

Process of treatment of synthetic textile material with silica

R. F. Nickerson (to Monsanto Chemical Co.). USP 2 701 218, February 1, 1955.

Treatment to reduce the tendency of fibers to slip on each other

H. G. Emblem (to Monsanto Chemicals Ltd.). USP 2 699 410, January 11, 1955.

DYEING AND PRINTING D 2

Checking contamination of printing color applied at one roller by the color applied at an earlier roller, using a radio-active substance

W. Meitner. BP 714 757, September 1, 1954. Through *BCIRA 34:* 943 (1954).

Chlorination of wool blends

F. O. Howitt, A. N. Davidson and R. Preston (to Wool Industries Research Assoc.). BP 714 829, September 1, 1954. Through *BCIRA 34:* 943 (1954).

Dyeing nylon with azo dyes

H. R. Hadfield (to Imperial Chemical Industries Ltd). BP 712 414, July 21, 1954. Through *BCIRA 34:* 902 (1954).

Printing of Terylene fabrics

W. F. Liquorice and A. G. H. Michie (to Imperial Chemical Industries Ltd). BP 712 418, July 21, 1954. Through *BCIRA 34:* 904 (1954).

Process for dyeing (black) fibers of cellulosic esters or ethers

Société Rhodiaceta (France). BP 712 460, July 21, 1954. Through *BCIRA 34:* 902 (1954).

Pressure and agitating apparatus for dyeing of skeins

F. F. Jacobs (to Ciba Co., Inc.). USP 2 700 883, February 1, 1955.

Process for dyeing acrylonitrile textile with copper salt and furfural

J. J. Iannarone, Jr. (to E. I. du Pont de Nemours and Co.). USP 2 700 589, January 25, 1955.

Production of printed cellulose derivative textile materials

H. C. Olpin and T. Jackson (to British Celanese Ltd). USP 2 699 373, January 11, 1955.

Rack for dyeing stockings

A. E. Williams and J. A. Leger (Canada). USP 2 701 460, February 8, 1955.

MECHANICAL PROCESSES D 3

Apparatus for shrinking textile fabrics and yarns

Rydboholms Akt (Switzerland). BP 712 427, July 21, 1954. Through *BCIRA 34:* 904 (1954).

Folding machine for sheets and the like

R. P. Gudgeon (to Brown and Green Ltd). BP 712 696, July 28, 1954. Through *BCIRA 34:* 913 (1954).

Apparatus for conveying fabrics and the like

F. B. Morrill (to James Hunter Machine Co.). USP 2 701 717, February 8, 1955..

Cloth folding device

W. J. Gibney and J. C. Ryder (to United Merchants and Manufacturers, Inc.). USP 2 701 715, February 8, 1955.

Weft straightening mechanism for tenter frames

F. W. Hoffman (to Macknight and Hoffman, Inc.). USP 2 701 405, February 8, 1955.

DRYING D 4

Continuously drying yarn in package form

B. Theis (Germany). BP 712 656, July 28, 1954. Through *BCIRA 34:* 905 (1954).

Cover to keep yarn packages in place on spindles during wet processing and drying

A. S. Pole (to Mellor Bromley and Co. Ltd). BP 714 435, August 25, 1954. Through *BCIRA 34:* 942 (1954.).

TESTING AND MEASUREMENT E

YARNS E 2

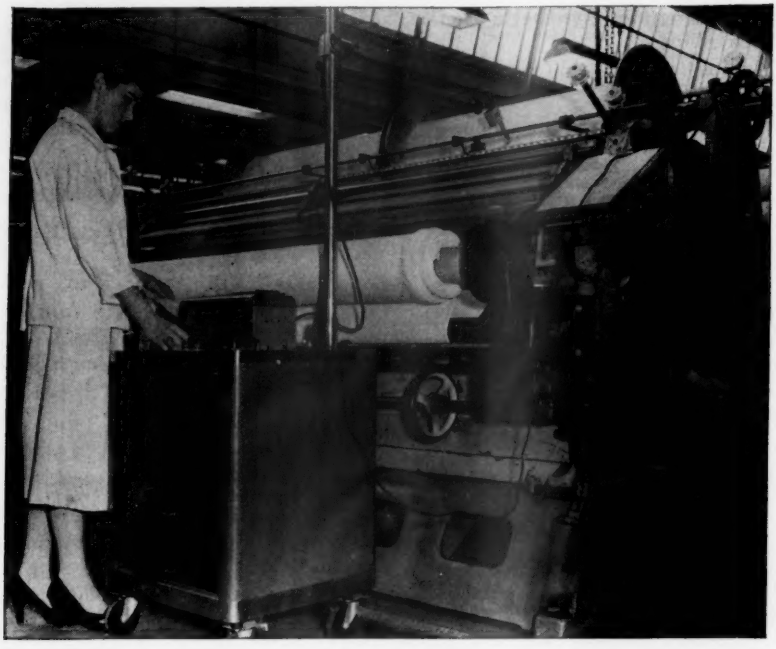
Instrument serving for determining and recording the variations in the tensile strength of rovings of fibrous materials

P. Litty (France). USP 2 699 674, January 18, 1955.

Yarn diameter measuring and recording instrument

F. P. Strother and J. A. Tourtellot (to Deering Milliken Research Trust). USP 2 699 701, January 18, 1955.

BRUSH TEXTILE INSTRUMENTS



Brush Tension Analyzer helps American Viscose improve textile processing

This test setup on a tricot knitting machine at Avisco's Textile Research Dept. utilizes a Brush Analyzer to measure tension on viscose dull yarn. The Analyzer measures and permanently records on graph paper both static and dynamic tensions from 1/10 to 400 grams in filamentary materials.

Mounted on casters, the unit can be used in research, or easily rolled to various pro duction machines. It improves quality con trol and reduces costs by indicating troubl spots due to improper tension. For informa tion on how Brush Textile Instruments ca help *you*, contact our Southeastern Offic or write Brush Electronics Company, Dep CC-3, 3405 Perkins Ave., Cleveland 14, Ohi

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